

## Conference Reports

### The Fourth SAE Total Life Cycle Conference in Detroit, Michigan, U.S.A. April 26-28, 2000

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Approximately 200 people attended the Fourth Total Life Cycle Conference of the Society of Automotive Engineers (SAE) held in Detroit, Michigan, U.S.A. Various environmental life cycle issues on transportation industries (mostly automotive) were presented and discussed. The attendees represented all industrial, public, and private sectors, including automobile manufacturers, suppliers, research organizations, consultancies, and non-governmental and governmental organizations. Although most attendees were from North America and Europe, some came from Japan, Brazil, China, India, and Russia. A total of 45 papers were presented in 11 technical sessions on various environmental and methodological issues. Topics covered in the technical sessions were: life cycle cost accounting; end of life treatment; modeling and life cycle tools; truck, bus, and car applications; fuel cells and batteries; alternative fuels; LCA of materials; life cycle methodology; automotive issues and impacts; component applications; and LCA of total vehicles.

In addition to the technical sessions, there were eleven 2-hr workshops and four panel discussions at the conference. The workshops covered topics including tutorial sessions on LCA, design for environment, life cycle management (LCM), and activity-based life cycle costing. The panel discussions were on sustainability issues, the role of suppliers on improving the environmental performance of the automotive industry, the regulatory and technological issues of the end-of-life phase of automobiles, the current status of the ISO 14000 series standardization process, and implications of the Integrated Product Policy (IPP) as initiated by the European Commission.

Presentations and discussions at the conference were divided into three groups: LCA application; LCA methodology development; and new technologies and materials. With respect to LCA application, it appeared that the automotive industry was interested in the application of LCA to product design and manufacturing, and the integration of LCA concepts into strategic and operational decision-making processes. Examples included LCAs for internal design for environment decisions, LCAs for policy making, the importance of integrating LCA into business decisions, supply-chain management, and acknowledged impact assessment methods. LCM was also presented and debated as an accounting process to assess environmental and economic costs within a manufacturing facility.

With regard to LCA methodology development, allocation in open-loop recycling, simplification of the inventory modeling,

dynamic modeling of the product system, and uncertainty in life cycle inventory analysis and impact assessment were discussed. The importance of market aspects to the selection of functional units was also presented, i.e. two completely different vehicles (e.g. a sports utility vehicle and a sedan) might be viewed to serve the same functional unit to a customer and could thus be compared.

With regard to new technologies and materials, many researchers presented LCA studies on the use of alternative fuels, fuel-cell vehicles, and new batteries. There was a heated debate on the use of aluminum and steel between representatives of the respective industries. The production of carbon dioxide and its impact on the environment was also an important issue at the conference.

At the end of the conference, there was a town-hall meeting during which the organizers of another LCA conference, which was held during the same week (April 25-27, 2000) in Washington, D.C., were invited to describe the conference. That conference was the *International Conference and Exhibition on Life Cycle Assessment – Tools for Sustainability (InLCA)* (p. 160) and was sponsored by the US EPA's Office of Research and Development and the Institute for Environmental Research and Education. The Washington, D.C. conference seemed to have been more focused on methodology development and attracted people mainly from academia, consultancies, government, and environmental organizations. As an attempt to improve the coordination of LCA activities among EPA, SAE, and other organizations, such as SETAC, IEEE, CIRP, the chairs of the organizing committees of the two conferences, Mary Ann Curran for the Washington, D.C. conference and Ronald L. Williams for the SAE conference, proposed holding a joint meeting in 2001 in Seattle, WA, U.S.A. This would bring together various LCA communities of both methodology development and applications.

Overall, the conference served well as a platform for sharing new developments in LCA in the automotive industry. It would have been even more fruitful, however, if more suppliers had participated in bringing in environmental issues associated with supply chains. Considering the ever-increasing global environmental problems, it was quite encouraging to see that vehicle manufacturers from all parts of the world (i.e. North and South America, Asia, and Western and Eastern Europe) are active in reducing environmental impacts associated with the production, use, and end-of-life of vehicles with the use of LCA tools.

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